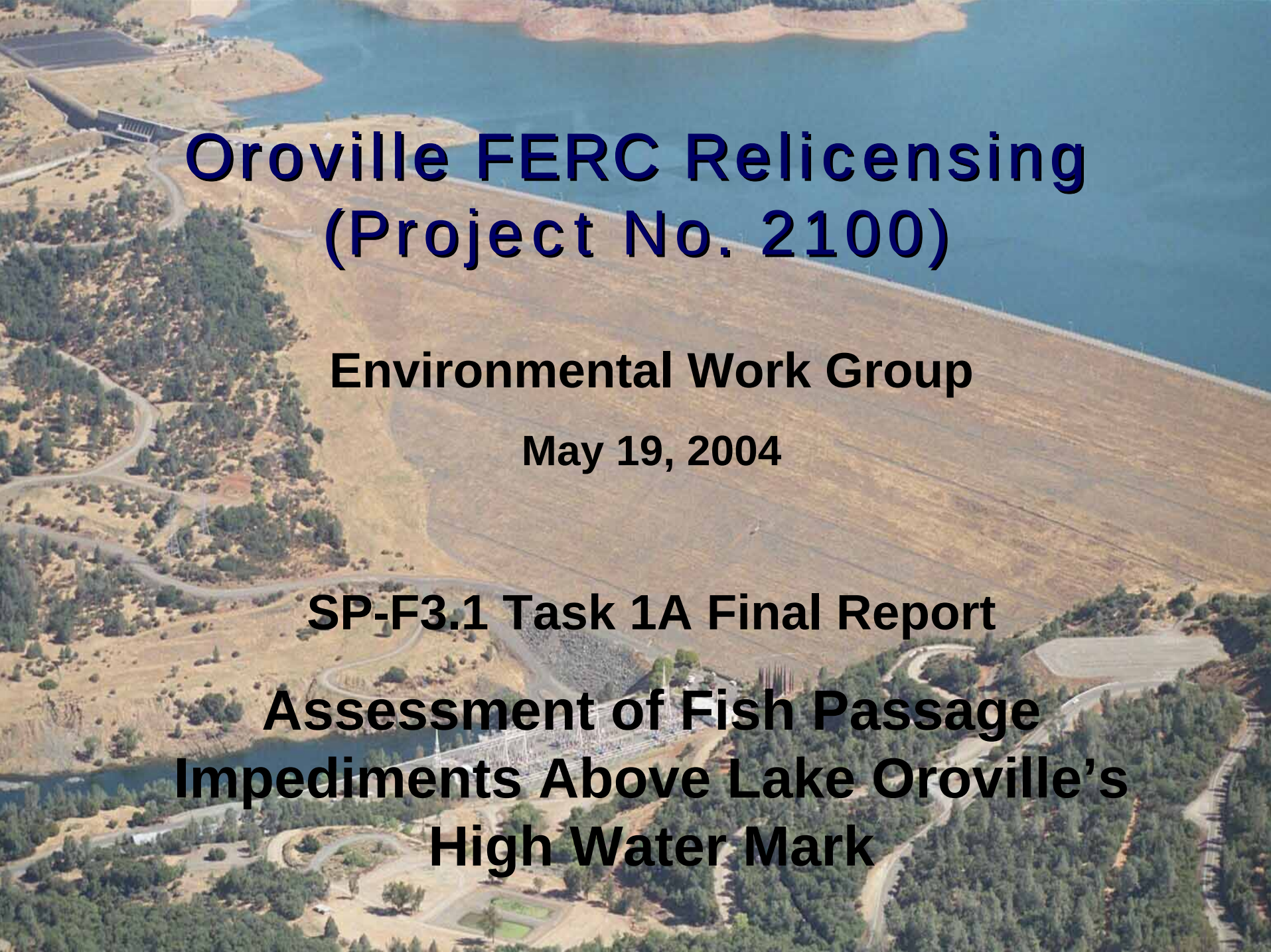


Oroville FERC Relicensing (Project No. 2100)

Environmental Work Group

May 19, 2004

SP-F3.1 Task 1A Final Report

Assessment of Fish Passage Impediments Above Lake Oroville's High Water Mark

Study Objectives

- **Identify and characterize potential fish passage barriers for inland salmonids, anadromous salmonids, and sturgeon upstream of Lake Oroville**

Report Overview

- **Updates from interim report**
- **Falls Below Big Kimshew Creek on West Branch Feather River**
- **Evaluation of reservoir sediment wedge fish passage from SP-G1**

Falls Below Big Kimshew Creek

- Height approx. 16 to 19 feet
- Pool is 16 to 23 feet deep
- Horizontal run of approx. 6 feet
- Not passable at observed flow
- Potentially passable at high flows

Lake Oroville Sediment Wedge Fish Passage Assessment

- **SP-G1 collected sediment wedge locations and reservoir stage elevations**
- **Sediment wedge top elevations ranged from 700 – 720 feet at their current locations**
- **Evaluate frequency and duration of sediment wedge exposure at current elevations against reservoir stage elevation historical records**

Lake Oroville Sediment Wedge Fish Passage Assessment

Table 5.2-1: Summary Table of Sediment Wedge Exposure During Anadromous Salmonid Upstream Migration Periods.

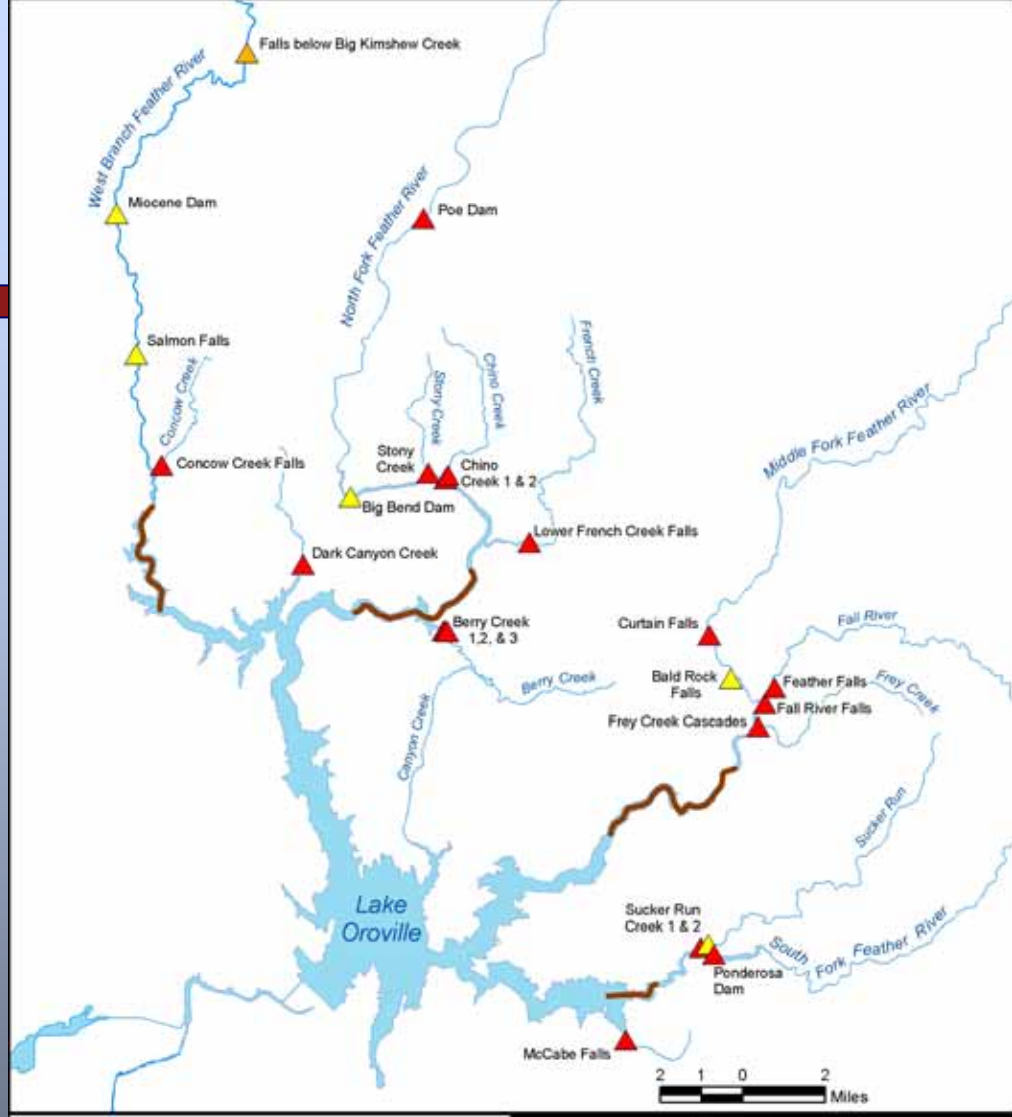
Tributary	Percentage of years with any sediment wedge exposure	Average percentage of immigration and holding period with exposed sediment wedges*		
		Spring-run Chinook salmon[A]	Fall-run Chinook salmon	Steelhead[B]
West Branch	18%	3%	6%	6%
North Fork	29%	8%	18%	17%
Middle Fork	29%	7%	16%	16%
South Fork	24%	4%	10%	11%

* Percentages based on the 17-year period of record for daily Oroville Reservoir water surface elevations compared to sediment wedge elevations during DWR survey efforts.

Lake Oroville Sediment Wedge Fish Passage Assessment

- **Sediment wedges are infrequently exposed during adult salmonid emigration at the current sediment wedge elevations**
- **Sediment wedges are much more likely to be a fish passage factor earlier in their development**

Final Report Conclusions



Provisional Passage Barrier

Fish Passage Barriers (Always Impassible)

Fish Passage Barriers (Passible at some flows or reservoir stage elevations)

Sediment Wedges

Data Sources: SWRI - fish passage barriers, sediment plugs
USGS - 1:100,000 scale hydrography (SWRI modified)

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Oroville Facilities Relicensing
FERC Project No. 2100

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FIGURE RS-1

Fish Passage Barriers:
Lake Oroville Upstream Tributaries

Prepared by:	Date	
B.F. - SWRI	03-31-04	Figure RS-1_3-31-04

Next Steps for Final Report

- **Determine complete fish passage barrier for West Branch**
- **Evaluate sediment plug information from SP-G1**
  - **Determine sediment plug reservoir inundation frequency and timing**
  - **Evaluate for fish passage**